

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2005/000408

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup> C07K16/18, C12N15/13, 15/63, 15/70, A61K39/395, A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup> C07K, C12N, A61K, A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, PAJ, CPRS, CNKI, CA, MEDLINE,  
CD3, CD28, TRISPECIFIC, ANTIBODY, ScFv, INTERLINKER, CEA

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ACTA BIOCHIMICA et BIOPHYSICA SINICA, Vol.35, No.6, June.2003 (06.2003), SONG, Lipi et al.: "A New Model of Trispecific Antibody with Cytotoxicity against Tumor Cells", page 503-page 510	1-3, 14, 16
Y		4-13, 15, 17-20
Y	HYBRIDOMA, Vol.9, No.1, 1990, Koga H. et al.: "Mouse-human Chimeric Monoclonal Antibody to Carcinoembryonic Antigen (CEA) : in Vitro and in Vivo Activities" , page 43-page 48	4-13, 15, 17-20
X	CN,A,1380341(Institute of Genetics, the Chinese Academy of Sciences) 20.November.2002(20.11.2002) page 7-page 19 of the Description	1-3, 14, 16

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
20.June.2005 (20.06.2005)

Date of mailing of the international search report

07 - JUL 2005 (07 - 07 - 2005)

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100088  
Facsimile No. 86-10-62019451

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WANG Boli

Telephone No. 86-10-62085225

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.

PCT/CN2005/000408

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN, A, 1380341	20.NOV.2002 (20.11.2002)	WO, A1, 02083738	24.OCT.2002(24.10.2002)
		AU, A1, 2002254846	28.OCT.2002(28.10.2002)
		EP, A1, 1378520	7.JAN.2004(07.01.2004)

## 国际检索报告

国际申请号

PCT/CN2005/000408

## A. 主题的分类

IPC<sup>7</sup> C07K16/18, C12N15/13, 15/63, 15/70, A61K39/395, A61P35/00

按照国际专利分类表(IPC)或者同时按照国家分类和 IPC 两种分类

## B. 检索领域

检索的最低限度文献(标明分类系统和分类号)

IPC<sup>7</sup> C07K, C12N, A61K, A61P

包含在检索领域中的除最低限度文献以外的检索文献

在国际检索时查阅的电子数据库(数据库的名称, 和使用的检索词(如使用))

WPI, EPODOC, PAJ, CPRS, 清华同方数据库, CA, MEDLINE, 三特异, 抗体, 癌胚抗原, 连接肽, CD3, CD28, TRISPECIFIC, ANTIBODY, ScFv, INTERLINKER, CEA

## C. 相关文件

类 型 *	引用文件, 必要时, 指明相关段落	相关的权利要求
X	生物化学与生物物理学报, 第 35 卷第 6 期, 6 月 2003(06.2003), 宋利萍等, “一种新型的重组单链三特异抗体的构建与表达” 第 503-510 页	1-3, 14, 16
Y		4-13, 15, 17-20
Y	Hybridoma, 第 9 卷第 1 期, 1990 年, Koga H.等, “Mouse-human chimeric monoclonal antibody to carcinoembryonic antigen(CEA): in vitro and in vivo activities” 第 43-48 页	4-13, 15, 17-20
X	CN, A, 1380341 (中国科学院遗传研究所) 20.11 月 2002(20.11.2002), 说明书第 7-19 页	1-3, 14, 16

☐ 其余文件在 C 栏的续页中列出。☒ 见同族专利附件。

\* 引用文件的具体类型:

“A” 认为不特别相关的表示了现有技术一般状态的文件

“E” 在国际申请日的当天或之后公布的在先申请或专利

“L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件

“O” 涉及口头公开、使用、展览或其他方式公开的文件

“P” 公布日先于国际申请日但迟于所要求的优先权日的文件

“T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件

“X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性

“Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性

“&amp;” 同族专利的文件

国际检索实际完成的日期

20.6 月 2005 (20.06.2005)

国际检索报告邮寄日期

07 · 7月 2005 (07 · 07 · 2005)

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国际检索报告  
关于同族专利的信息

国际申请号

PCT/CN2005/000408

检索报告中引用的 专利文件	公布日期	同族专利	公布日期
CN, A, 1380341	20.11 月 2002(20.11.2002)	WO, A1, 02083738	24.10 月 2002(24. 10.2002)
		AU, A1, 2002254846	28.10 月 2002(28. 10.2002)
		EP, A1, 1378520	7.1 月 2004(07.0 1.2004)

## SEQUENCE LISTING

<110> 北京安波特基因工程技术有限公司  
东莞豪发生物工程技术开发有限公司

<120> 基因工程重组抗CEA抗CD3抗CD28单链三特异抗体

<130> I040179

<160> 52

<170> PatentIn version 3.1

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35 40 45

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50 55 60

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65 70 75 80

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100 105 110

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115 120 125

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145 150 155 160

Ile Ser Cys Arg Ala Ser Gln Ser Val Ser Thr Ser Ser Tyr Thr Tyr  
165 170 175

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180 185 190

Lys Tyr Ala Ser Asn Leu Glu Ser Gly Val Pro Ala Arg Phe Ser Gly  
195 200 205

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35 40 45

Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe  
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 65 70 75 80  
 Asn Thr Ala Tyr Met Lys Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala  
 85 90 95  
 Val Tyr Tyr Cys Ala Thr Gly Thr Thr Pro Phe Gly Tyr Trp Gly Gln  
 100 105 110  
 Gly Thr Leu Val Thr Val Ser Ala Thr Ser Thr Pro Ser His Asn Ser  
 115 120 125



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Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly  
 145 150 155 160

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 165 170 175

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 180 185 190

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 195 200 205

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn Ile His  
 210 215 220

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Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln  
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 325 330 335

Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe Lys Asp Lys  
 340 345 350

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 385 390 395 400

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 420 425 430

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435 440 445

Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln  
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485 490 495

Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln Glu Asp Ile Ala Thr Tyr  
500 505 510

Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Ala Gly Gly Thr  
515 520 525

Lys Leu Glu Leu Lys Arg Ala Val Asp Phe Gln Asn Ala Leu Leu Val  
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Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Pro Val Gln  
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